PENGARUH PENAMBAHAN ISOLAT BAKTERI ASAM LAKTAT PADA FERMENTASI DEDAK HALUS TERHADAP pH DAN KADAR ASAM LAKTAT

INTISARI

Penelitian ini bertujuan untuk mengetahui pengaruh penambahan isolat bakteri asam laktat (BAL) pada fermentasi dedak halus terhadap produk-produk fermentasi. Isolat BAL hasil isolasi feses pedet yang merupakan koleksi Laboratorium Biokimia Nutrisi, isolat dinokulasikan ke dalam medium susu bubuk kadaluwarsa sebagai sumber nutrien untuk pengkayaan bakteri, dan diinkubasi selama 24 jam pada suhu 39°C. Starter yang diperoleh digunakan untuk fermentasi dedak halus skala laboratorium *(Pi)* dan aplikasi fermentasi di lapangan (P_2). Pada Pi ada 3 macam perlakuan yaitu dilakukan dengan level penambahan tepung *cassava* 0%, 5% dan 10%. Inokulasi dilakukan dengan penambahan isolat BAL 5% dengan inkubasi pada suhu ruang. Pengambilan sampel pakan fermentasi dilakukan pada jam ke-0 sampai 168 jam dengan selang waktu 24 jam. Evaluasi dilakukan terhadap pH, uji kadar asam laktat dan uji kualitas fisik dedak halus. Pada P_2 dilakukan dengan 2 macam perlakuan yaitu kontrol (BAL 0%) dan dengan penambahan isolat BAL 5%. Pengambilan sampel pakan fermentasi dilakukan pada jam ke-Q dan jam ke-120 untuk evaluasi kadar asam laktat, pH, dan perubahan total bahan kering (BK) dan total bahan organik (BO) serta uji kualitas fisik dedak halus. Masing-masing variabel penelitian dianalisis dengan analisis faktorial. Perbedaan rerata karena perlakuan diuji dengan uji *Duncan's multiple range test* (DMRT). Hasil analisis Pi menunjukkan bahwa terdapat pengaruh yang nyata lama fermentasi terhadap peningkatan kadar asam laktat ($P<0,05$), tetapi kadar asam laktat pada level *cassava* tidak menunjukkan perbedaan yang nyata. Perbedaan yang nyata ($P<0,05$) terjadi pada penurunan pH sebagai akibat dari kedua perlakuan. Hasil analisis P_2 menunjukkan pengaruh yang nyata ($P<0,05$) penambahan isolat BAL dan lama fermentasi terhadap peningkatan kadar asam laktat dan penurunan pH. Perubahan Total BK dan BO tidak berbeda nyata. Penambahan isolat BAL 5% pada fermentasi dedak halus berhasil meningkatkan kadar asam laktat, menurunkan pH dan perubahan dedak halus hasil fermentasi yaitu tekstur yang padat, bau harum dan enak.

(**Kata Kunci :** Bakteri Asam Laktat, Dedak Halus, Fermentasi, Ransiditas)

The Effect of Utilization of Lactic Acid Bacteria Culture on Rice Bran Fermentation For PH and Level of Lactic Acid

ABSTRACT

The objective of this study was to determined the effect of Lactic acid bacteria (LAB) on rice bran fermentation for its fermentation products. Lactic Acid Bacteria isolates has been collected from fecal material of young calves which is prepared in Nutritional Biochemistry Laboratory. The isolates was inoculated into liquid enrichment medium containing expired milk powder as a nutrient source which incubated at 39°C for 24 hours to produce starter. Starter obtained was used for rice bran fermentation which treated in laboratory scale (P_i) and field application (P_2). Rice bran on P_i was added by Cassava meal with the level 0%, 5% and 10%. The inoculation were done by LAB addition as much as 5%. Rice bran fermentation was measured at 0, 24, 48, 72, 96, 120,144 and 168 hours. The sample was taken for decreasing of pH, lactic acid produced at lowest point of pH as well as physical quality assay. The 2 groups in P_2 was not inoculated by LAB isolates as control (BAL 0%) and inoculated by LAB isolates 5%. The sample was taken at 0 and 120 hours for lactic acid produced, pH, dry matter and organic matter contents as well as physical quality assay. Variables were analyzed using Factorial method. The differences of mean values affected by treatment were analyzed by DMRT. The result of P_i showed that lactic acid increased significantly by time of fermentation ($P<0,05$) but it was not significantly by the levels of Cassava, increasing of Cassava levels and time of fermentation decreased significantly pH value ($P<0,05$). The result of P_2 showed that there was significant ($P<0,05$) increasing lactic acid produced and decreasing pH by BAL addition and time of fermentation. Changes of total dry matter and organic matter contents were not significant. The fermentation with BAL addition was done succesfully indicated by the compact texture and good smell.

(**Key Words** : Lactic Acid Bacteria, Rice Bran, Fermentation, and Rancidity)